

Edinburgh, 10th December, 1760

£7.50.

To the Honourable the COMMISSIONERS and TRUSTEES for improving
FISHERIES and MANUFACTURES in Scotland,

THE PETITION

OF

WILLIAM CHEAPE Linen Manufac-
turer in Edinburgh,

SHEWETH,

THAT the growing of Flax in Scotland, and to be independent
on Foreigners for that Material, is worthy the Consideration of
every Individual, but more especially the Honourable Board, and
those concerned in its Linen Manufactures.

YOUR Honours recommended to all concerned, to think what would
be most conducive to Flax-raising: whereby your Petitioner was led to
Lint-mills, and the Advantages that might arise from a better constructed
Machine; and upon offering his Thoughts thereon to your Honours, by
the Help of a Pasteboard Model, you were pleased to order a perfect Mo-
del of what he aimed at, to be made at the Cost of the Honourable Board.

YOUR Petitioner, in place of a Model, made an eight Part of the Ma-
chine itself to turn by a Man's Hand, and upon Application to have the
same experimented, *Angus MacDonnel* was appointed to scutch one Stone
of bruised Lint upon his Lint-mill at *Ely*, and to bring the Produce of said
Stone, with two other Stones of bruised Lint, to your Office; the one
to be scutched upon this new Machine, and the other by Stock and Hand-
scutching; all which was done, and the Flax scutched by this Machine,
and its natural Manner of scutching, were highly approven of; but the
extraordinary Expence of this Machine, and the Housing it required, so
much exceeded the Cost of the present Lint-mills, that it became a Discou-
ragement to the erecting Mills after its Model.

YOUR Petitioner was therefore desired to try if he could help what was
complained of in this Machine, or construct any other to scutch in the
same natural Manner, to be erected at less Expence. This Task your
Petitioner most unwillingly undertook, foreseeing many Difficulties, and
the more he thought on what was required, the more Discouragements
arose to be overcome, and he almost despaired of Success; but impelled
by

Pet'r William Cheape
His new invented Machine
for Scutching Lint.
10 Decr 1760

by the Promise he had given to use his utmost Endeavours, and also by the constant Demands to know what he had done, he made many Trials, and at the last Trial was so fortunate, after very much Labour, to succeed to his utmost Wishes, in constructing a plain, simple Machine, that has the same natural Manner of scutching the first had, and can be erected with less Cost than even the present Lint-mills.

THIS Machine will best be understood, by enumerating the Advantages gained by it, and the Disadvantages attending the present Lint-mills, with which we shall begin. The Scutchers of the present Lint-mills give an horizontal, in place of a perpendicular Stroke or Scutch upon the Flax, and have immoveable Scutching-benches; also the Distance betwixt these Benches and its Scutchers is unvariable, from whence these pernicious Effects come upon the Flax, besides the fatal Accidents that often befall the Operators.

I. THE Flax hangs down perpendicularly from the Scutching-benches, and is struck horizontally by the Scutchers, which Stroke begins on the Flax one third of its Length from the upper End held by the Operator, and increases in Strength proportionally till it comes to the downmost End; whereby the Flax is cleaned at the Ends, in half the Time it requires to clean the Middle of the Handful, so that the Ends is most unmercifully scutched away, ere the Middle is cleaned, by which a most obvious Waste ensues.

II. THE Action of the Scutchers is equally strong upon all Flax at the Time it is least able to bear it, and that is, when it is full of the Boon; because the Flax being then placed upon immoveable Scutching-benches, against the horizontal Ray of the Scutchers, makes the greatest Resistance to their Action, and is thereby cut and wasted, more or less, in Proportion to the Strength of the Flax, the Care of the Operators, and the Thickness of the Handfuls placed on the Benches, there being betwixt them and the Scutchers always the same unvariable Distance.

III. FLAX being liable to various Accidents, proceeding from the Season, Soil, Watering, and sundry other Causes, whereby it is often tendered in Part, 'tis impossible, either by Care or Culture, to give it always the same Degree of Strength, and Accidents will also happen, whereby a Part of a Parcel is sometimes tendered to a considerable Degree, and yet not rendered useless for many Purposes of Manufacture; but when such Flax comes under the Influence of the Scutchers, it is most incredibly wasted ere it can be clean scutched; because their Action cannot be moderated with any certainty, and even this uncertain Degree, costs the Operator more Trouble than he will, or even can afford to bestow upon it.

IV. THE whole Boons and Refuse scutched from the Flax, by all the Operators employed at one Mill, falls promiscuously into one common Receptacle; so that the Flax driven away by inattentive Management, over and above what is necessarily wasted by the Machine, cannot be fixed upon any individual Operator, and all of them will equally deny, whereby so great a Latitude is given to Inattention, as renders it impossible to prevent it.

V. THE



V. THE Operators are paid in Proportion to the Weight of Flax they do scutch, which certainly is the best Method of regulating their Wages; but from this, and an Emulation who shall earn most, and the Impossibility of fixing Inattention upon Individuals, there ensues, from these concurring Causes, considerable Waste; for the Operators, to increase their Quantities, put great Handfuls upon the immoveable Scutching-benches, which making great Resistance to the Action of the Scutchers, is not only cut, but even pulled away by Handfuls, and this Resistance is hereby so much increased at some times, and occasions so strong a Draught as pulls in the Operator's Fingers or Hand, whereby they are cut off, and there has happened but too many of these fatal Accidents.

ALL these Causes of Waste, Inconveniencies, and other Evils attending the present Lint-mills, will be removed by this new Machine, as follows:

I. THIS Machine has a Scutching-stock, of the same Form as is, or ought to be used by the best Hand-scutchers, which is fixed by a Hinge at Bottom, and so becomes moveable, yielding to any extraordinary Resistance upon it from whatever Cause, whereby extraordinary Resistance or Draught can never happen by the Action of the Scutchers upon a large Handful of Flax put upon the Stock by any Operator; the only Consequence arising therefrom will be, that this large Handful will require longer Time to clean than a lesser one; so that Waste, or Loss of Members, and many other Evils, is hereby prevented.

II. THE Distances betwixt the Stocks and Scutchers is made more or less, at Pleasure, by each Operator, with Facility and Ease, whereby the Action of the Scutchers upon the Flax, is moderated or increased to any degree of Proportion required, to scutch Flax full of the Boon, or near cleaned, when stronger Action is necessary, or to scutch strong Flax, or that which has been more or less tendered.

III. THE Flax hangs from the Top of the Stock, and the Scutching-boards turn to any Direction the Operator pleases; their Stroke is perpendicular, and strongest at the Top of the Stock or Middle of the Handful of Flax, decreasing proportionally as they come to the under End, so that the Middle of the Handful is clean scutched equally soon as the Ends, whereby all Waste upon the Ends is prevented by this Machine.

IV. EACH Operator has his own Stock and Scutchers, which are free and unconnected with all the others, whereby he can instantaneously moderate or increase their Strength of Action to the Degree his own Work requires, and the Places for their Boons and Refuse scutched from their Flax, are separated by Divisions from each other, whereby extraordinary Waste by any Operator's Inattention, or upon tender Flax, is hereby perfectly known, and may be properly checked and prevented.

V. THIS Machine, when erected into a Mill to go by Water foreight Men to work at, which few Mills exceed employing, will require a House with side Walls only six Feet high, the Area of the House within the Walls about 16 by 18 Feet, and lighted from the Roof; and as it is believed, her Machinery will cost rather less than the present Mills, it is thereby evident, that the Savings upon Flooring, Joisting, and one Storey of House-

House-height, will make a Lint-mill, erected after the Model of this Machine, considerably less expensive than the present Mills.

VI. FALLS of Water are not every where to be found, nor the Growth of Flax yet so considerable as to make it worth while to erect Mills in many Places where they are: It may therefore prove no small Benefit to the Public, that Machines, after this Model, may be made at a small Expence, to turn by one Man's Hand to scutch Flax to good Advantage: Also the Machinery of the present Lint-mills can be altered to this Model, at a very small Charge; and further, this Machine could be added, in a small House built of Timber, to the Side of any Corn-mill, to be turned by her Cog-wheel, and set off or on at Pleasure, at a small Expence.

YOUR Petitioner again applied to the Board, to have this new Machine experimented, and *Angus MacDonnel* was ordered to take a Parcel of bruised Lint, and scutch so much of it upon his Lint-mill at *Ely*, and to bring the Produce thereof, and the rest of the unscutched Parcel, to your Office here, to be scutched upon this new Machine, and by Stock and Hand-scutching, which being done, your Petitioner believes the Truth of what he has advanced will appear from the Machine itself, with *Angus MacDonnel's* Observations thereon, and from the Flax now scutched upon it, compared with that scutched by the Lint-mill, and that scutched by Stock and Hand-scutching herewith produced.

FROM the Flax scutched by this Machine, &c. it will appear, it has every Advantage produced by the present Lint-mills over Stock and Hand-scutching; these are, improving the Colour, good Ends, and quick Dispatch: Also all the Advantages of Stock and Hand-scutching over Lint-mills; these are, superior Yield, and preserving the Harle, or whole Flax growing upon one Boon or Stem, intire and undivided, which is the strongest Proof that can be demanded, to show that the Action of this Machine is equally safe for the Flax, as Hand-scutching is. And further, this Machine can be erected into a Mill at less Cost than the present Mills; also the Machinery of these Mills can be altered to the Model of this Machine, at a small Charge, and likewise it can be added to any Corn-mill, at very little Expence, or made into Smaller Machines, to turn by a Man's Hand.

May it therefore Please your Honours, to take under Consideration what is set forth by your Petitioner, and do therein what in your Wisdom shall be thought most conducive, to increase the Growth of Flax in Scotland, and better the Produce thereof, for the Good of its Linen Manufactures.

Your Petitioner earnestly wishes, that no Encouragement you may decree for his Invention and Trouble, which has been very considerable, may in any ways be proportionable to the Advantages this Machine may produce for advancing the Linen-trade, which are too many to be enumerated here; for the Prosperity of which Trade, and Success to your Honours many Endeavours, and wise Regulations to promote it, your Petitioner ever prays.

WILLM. CHEAPE.



